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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/976,210	10/11/2001	Victor F. Petrenko	393551	1402

7590

03/14/2005

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EXAMINER

VAN, QUANG T

ART UNIT

PAPER NUMBER

3742

DATE MAILED: 03/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	09/976,210		PETRENKO, VICTOR F.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Quang T Van		3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on RCE filed on 7/12/2004.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-9, 12-16 and 18-21 is/are rejected.
- 7) ☒ Claim(s) 4, 10, 11 and 17 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>7/8/04</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

***Claim Objections***

1. Claims 1-17 and 19-21 are objected to because of the following informalities: the term "and less than 300KHz" recited in claim 1, line 9, lacks antecedent from specification. Appropriate correction is required.

***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Broussoux et al (US 5,172,024), cited in previous Office Action. Broussoux discloses a device to eliminate ice formed on the surface of an optical or radio-electric window comprising a first electrode (20) embedded into or coated onto an object to be protected from ice formation; a second electrode (20'), the first electrode (20) and the second electrode (20') defining an interelectrode space (10) between the first electrode and the second electrode, the first electrode and the second electrode defining an interelectrode distance (10) that separates the first electrode and the second electrode; an AC power source (21) for providing an AC voltage across the first and second electrodes having a frequency greater than 1000Hz and less than 300KHz (col. 8, lines 30-31).

NOTE: In claim 1, the term "for melting interfacial ice" is considered intended use.

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4. Claim 18 is rejected under 35 U.S.C. 102(b) as being anticipated by Tuan et al (US 6,825,444). Tuan discloses, figure 10, a heated bridge deck system comprising the step of embedding or coating an object to be protected from ice formation with a first electrode (24), and applying an alternating electric field proximate to the ice interface for generating a resistive AC current in the interfacial ice (col. 1, lines 5-13).

***Claim Rejections - 35 USC § 103***

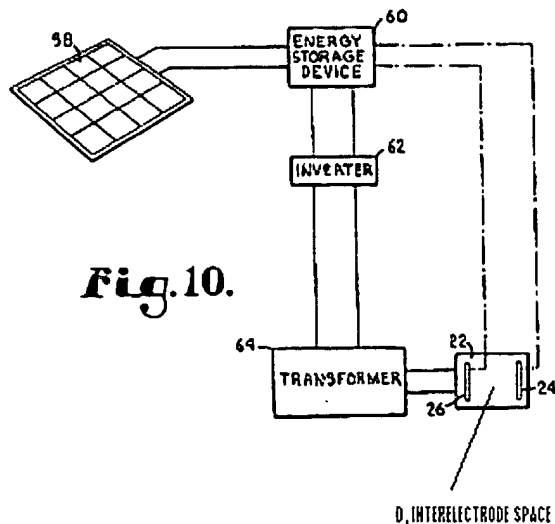
5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 rejected under 35 U.S.C. 103(a) as being unpatentable over Tuan et al (US 6,825,444) in view of Broussoux et al (US 5,172,024). Tuan discloses, figure below, a heated bridge deck system comprising a first electrode (24) embedded into or coated onto an object to be protected from ice formation; a second electrode (26), the first electrode (24) and the second electrode (26) defining an interelectrode space (D, figure below) between the first electrode (24) and the second electrode (26), the first electrode and the second electrode defining an interelectrode distance (D) that separates the first electrode and the second electrode; an AC power source (col. 14, lines 11-15) for providing an AC voltage across the first and second electrodes. However, Tuan does not disclose an AC power source having a frequency greater than 1000Hz and less than 300KHz. Broussoux discloses an AC power source having a

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frequency greater than 1000Hz and less than 300KHz. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Tuan an AC power source having a frequency greater than 1000Hz and less than 300KHz as taught by Broussoux in order to limit the heat apply to the heated object.



7. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Broussoux et al (US 5,172,024) in view of Zieve (US 4,895,322) both cited in previous Office Action. Broussoux discloses substantially all features of the claimed invention except the AC power source provides an AC voltage in range of about from 10 volts to 500 volts. Zieve discloses an AC power source provides an AC voltage in range of about from 10 volts to 500 volts (col. 4, lines 10-12). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Broussoux an AC power source provides an AC voltage in range of about from 10 volts to 500 volts as taught by Zieve in order to provide sufficient power for deicing system.

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8. Claims 3, 6, 12-13, 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Broussoux et al (US 5,172,024) in view of Bird (US 4,732,351) both cited in previous Office Action. Broussoux discloses substantially all features of the claimed invention except an electrical insulator located in the interelectrode space. Bird discloses an electrical insulator (12) located in the interelectrode space (Fig. 3, between electrodes 34 and 36). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Broussoux an electrical insulator located in the interelectrode space as taught by Bird in order to maintain the potential different between the electrodes.

9. Claims 7-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Broussoux et al (US 5,172,024) in view of Weinstein (US 6,239,601) both cited in previous Office Action. Broussoux discloses substantially all features of the claimed invention except the interelectrode distance has a value in a range of about from 50  $\mu\text{m}$  to 500  $\mu\text{m}$ . Weinstein discloses an interelectrode distance has a value in a range of about from 50  $\mu\text{m}$  to 500  $\mu\text{m}$  (col. 4, lines 10-13). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Broussoux an interelectrode distance has a value in a range of about from 50  $\mu\text{m}$  to 500  $\mu\text{m}$  as taught by Weinstein in order to control the applying voltage. With regard to claims 8 and 9, It would have been obvious to one having ordinary skill in the art to modify the interelectrode distance has a value less than 50  $\mu\text{m}$  or has a value greater than 500  $\mu\text{m}$ . Doing so would control the applying voltage, since the less value for the less applying voltage and the more value for the greater applying voltage.

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10. Claims 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tuan et al (US 6,825,444) in view of Broussoux et al (US 5,172,024). Tuan discloses substantially all features of the claimed invention except the step of applying an alternating electric field having a frequency greater than 1000Hz. Broussoux discloses the step of applying an alternating electric field having a frequency greater than 1000Hz (col. 8, lines 30-31). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize in Tuan an alternating electric field having a frequency greater than 1000Hz as taught by Broussoux in order to provide a sufficient electric field to melt the ice.

11. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tuan et al (US 6,825,444) in view of Broussoux et al (US 5,172,024) and further in view of Zieve (US 4,895,322). Tuan and Broussoux disclose substantially all features of the claimed invention except the AC power source provides an AC voltage in range of about from 10 volts to 500 volts. Zieve discloses an AC power source provides an AC voltage in range of about from 10 volts to 500 volts (col. 4, lines 10-12). It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize Tuan and Broussoux an AC power source provides an AC voltage in range of about from 10 volts to 500 volts as taught by Zieve in order to provide sufficient power for deicing system.

12. Claims 4, 10, 11, and 17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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13. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record does not show or suggest the insulator comprises a nonconductive rubber windshield wiper blade as recited in claim 4; the first electrode and second electrode comprise a layer of conductive glass as recited in claims 10-11; and the second electrode comprises a conductive rubber windshield wiper blade as recited in claim 17.

***Response to Amendment***

14. Although Broussoux teaches detaching or breaking ice; however, Broussoux's reference meets all the claimed limitations and the term "for melting interfacial ice" in the preamble of claim 1, is intended use; therefore, claim 1 is remain rejected by Broussoux's reference.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quang T Van whose telephone number is 571-272-4789. The examiner can normally be reached on 8:00Am 7:00Pm M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



QV

February 28, 2005



Quang T Van  
Primary Examiner  
Art Unit 3742